

April 29, 1965

Dr. Frank H. Stodola
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Dear Frank:

If we find life on Mars, will it be of independent origin, or our cousin?

How improbable is the rediscovery of gibberellin? Do we know its biosynthesis? I assume anyhow it is of adaptive value to the fungus. Anyhow it is why you cultivate it now!

On the other hand, there are many subtle ways a fungus could "learn" a series of steps from a host. I have in mind the evolutionary process backwards from the end product that Horowitz* suggested some time ago.

I would be the last to deny a more direct process of assimilating genetic information. Frits Went** had some similar thoughts for plant speciation a few years ago too, and we ought not dismiss them too quickly. But I might look for more direct evidence, say a concrete experiment, or, if this is asking too much, a closer matching of the amino acid sequences of the respective proteins. Gene McCarthy's DNA hybridization technique is another way of investigating ultimate homologies.

What a dusty nostalgic whiff of the past you wafted to me. You were too kind then, and even more now. I do see I have lost my good memory, and I hope some of my brashness, but not my bad handwriting; and I may still write that paper sometime on colchicine in animals. (There is a hint of the same theme in the enclosure 1).

While we are reminiscing about college organic, you will understand why I might point out some further repercussions (enclosure 2 - can be read in order A,B,C, to limit of your time and patience). Any remarks welcome.

Esther joins as co-Pastorian in greetings and good fellowship.

Sincerely yours,

Joshua Lederberg
Professor of Genetics

*Horowitz, N. H., 1945. On the evolution of biochemical syntheses. Proc. Natl. Acad. Sci. Wash., 31:153-157.

**x Couldn't find Went ref*

sent J.L. # 102, 110

Pendral & PNAS #120

STC Doc A